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(FILE 'HOME' ENTERED AT 12:05:13 ON 01 AUG 2008)

FILE 'CA' ENTERED AT 12:05:31 ON 01 AUG 2008

L1 5559 S (COLD OR CRYOGENIC) (3A) (TRAP? OR FINGER OR CAPTUR?) OR CRYOTRAP?  
L2 343 S L1(8A) SAMPL?  
L3 148 S (ANALYTE OR VOLATIL? OR GAS) (4A) (RELEAS? OR DESOR?) AND L1  
L4 50 S (ANALYTE OR VOLATIL? OR GAS) (4A) (RELEAS? OR DESOR?) (10A) L1  
L5 242 S L1(8A) (CONCENTRAT? OR PRECONCENTRAT? OR ENRICH?)  
L6 3 S L2, L5 AND DEGAS?  
L7 109 S L2, L5 AND HEAT?  
L8 9 S L3 AND (MULTIPLEX? OR MULTIDIMEN? OR 2 DIMEN? OR PARTIAL?)  
L9 165 S L4, L6-8  
L10 133 S L9 AND PY<2003  
L11 10 S L9 AND PATENT/DT NOT L10  
L12 143 S L10-11

=> d bib, ab, kwic l12 1-143

L12 ANSWER 13 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 137:83154 CA

TI An automated hydride generation-cryogenic trapping-ICP-MS system for measuring inorganic and methylated Ge, Sb and As species in marine and fresh waters

AU Ellwood, Michael J.; Maher, William A.

CS Ecochemistry Laboratory, Division of Science and Design, University of Canberra, Canberra, 2601, Australia

SO Journal of Analytical Atomic Spectrometry (2002), 17(3), 197-203

AB The authors describe a hydride generation system for measuring the inorg. and methylated species of three metalloids, Ge, Sb and As, in marine and freshwater samples. The system uses the principles of both flow injection and batch hydride generation and couples it to an automated cryogenic trapping unit with detection by ICP-MS. The Teflon cryogenic trap was packed with 10 cm of SE-30 5% Chromosorb W-HP 80-100 mesh and wound with 1.2 m of resistance wire. A motorized cryofocusing unit was designed and built to lower and raise the hydride trap into and out of a liq. nitrogen dewar and to control the heating of the hydride trap. The compromise conditions for hydride generation and cryogenic trapping of inorg. and methylated species were final soln. concns. of 0.06M hydrochloric acid, 0.5% wt./vol. sodium tetrahydroborate and 0.5% wt./vol. cysteine. For measurement of AsIII and SbIII cysteine was omitted. Samples were purged and trapped with helium at a flow rate of 80 mL min<sup>-1</sup>. One run took 8.75 min for a 1 mL sample. Detection limits were 1-5 pM for Ge species, 0.001-0.004 nM for Sb species and 0.002-0.069 nM for As species. The anal. precision for inorg. and methylated species was 2-8% for all but two of (TMSb, 20% and DMSb, 11%) at concns. typically found in the environment. Results for a range of natural waters are presented to illustrate the use of the system.

L12 ANSWER 20 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 134:204099 CA

TI MOD: an organic detector for the future robotic exploration of Mars

AU Kminek, G.; Bada, J. L.; Botta, O.; Glavin, D. P.; Grunthaner, F.

CS Scripps Institution of Oceanography, La Jolla, CA, 92093-0208, USA  
 SO Planetary and Space Science (2000), 48(11), 1087-1091  
 AB Searching for extinct or extant life on Mars is part of the future NASA  
 surveyor class missions. Looking for key org. compds. that are  
 essential for biochem. as the authors know it or indicative of  
 extraterrestrial org. influx is the primary goal of the Mars Org.  
 Detector (MOD). MOD is able to detect amino acids, amines and PAHs with  
 at least 100 times higher sensitivity than the Viking GCMS expt. MOD is  
 not capable of identifying specific org. mols. but can assess the org.  
 inventory of amines and PAHs on the planet. MOD can also quantify  
 adsorbed and chemisorbed water and evolved carbon dioxide in a stepped  
 heating cycle to det. specific carbon-bearing minerals. All that comes  
 with no sample prepn. and no wet chem. The orgs. can be isolated from  
 the carrier matrix by heating the sample and recovering the volatile  
 orgs. on a cold finger. This sublimation technique can be used for  
 extg. amino acids, amines and PAHs under Mars ambient conditions. The  
 detection of amino acids, amines and PAHs is based on a fluorescence  
 detection scheme. The MOD concept has functioned as a lab. breadboard  
 since 1998. A no. of natural samples including shells, clays, bones,  $\lambda$ -  
 DNA and E.-coli bacteria have been used and org. mols. have been extd.  
 successfully in each case. The first prototype of MOD is operational as  
 of early fall of 1999. MOD has been selected for the definition phase  
 of the NASA-MSR 2003 mission.

L12 ANSWER 62 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 120:327363 CA  
 OREF 120:57531a,57534a  
 TI Analyzing materials with hydrocarbon potential  
 IN Bailey, Nigel John Lewis  
 PA Geochem Group Ltd., UK  
 SO Brit. UK Pat. Appl., 13 pp.  
 PI GB 2271179 A 19940406 GB 1992-20926 19921005  
 PRAI GB 1992-20926 19921005  
 AB App. for anal. of materials e.g. rock or kerogen with hydrocarbon  
 potential has a pyrolysis furnace assembly for combustion and oxidn. of  
 material to CO<sub>2</sub>, cold traps to remove CO<sub>2</sub> and a mass spectrometer to  
 analyze gases for CO<sub>2</sub> after release from the traps. A furnace assembly  
 with three independently controlled heating windings is further  
 disclosed.

L12 ANSWER 68 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 119:234804 CA  
 OREF 119:41693a,41696a  
 TI Ultrahigh vacuum cold finger for surface reaction studies  
 AU Frankel, D. J.; Fruhberger, B.; Jackson, R. H.; Dwyer, D. J.  
 CS Lab. Surf. Sci. Technol., Univ. Maine, Orono, ME, 04469-5764, USA  
 SO Review of Scientific Instruments (1993), 64(8), 2368-70  
 AB The design of a cold finger and sample holder for use with a long-strong  
 XYZ manipulator in a multi-technique ultrahigh vacuum chamber is  
 presented. The cold finger design, based on the concept of a cryogenic  
 transfer line, minimizes unwanted cryosorption on the surface of the  
 cold finger. The simple, durable design allows samples to be cooled to

<90 K, rapidly heated to >1000 K, and quickly returned to low temps. The rapid heating and cooling rates coupled with low outgassing make the design ideal for thermal desorption spectroscopy studies.

L12 ANSWER 92 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 109:141821 CA

OREF 109:23399a,23402a

TI Determination of trichlorofluoromethane and dichlorodifluoromethane in seawater and air

AU Bullister, J. L.; Weiss, R. F.

CS Scripps Inst. Oceanogr., Univ. California, La Jolla, CA, 92093, USA

SO Deep-Sea Research, Part A: Oceanographic Research Papers (1988), 35 (5A), 839-53

AB An improved anal. technique has been developed for the rapid and accurate shipboard measurement of two anthropogenically produced chlorofluorocarbons (CFCs), CCl<sub>3</sub>F (F-11) and CCl<sub>2</sub>F<sub>2</sub> (F-12), in air and seawater. Gas samples (dry air or std.) are injected into a stream of purified gas and then concd. in a low temp. trap. Seawater samples collected in oceanog. Niskin bottles are transferred into glass syringes for storage until anal. An aliquot of approx. 30 cm<sup>3</sup> of seawater is introduced into a glass stripping chamber where the dissolved gases are purged with purified gas, and the evolved CFCs are concd. in the same cold trap. The trap is subsequently isolated and heated, and the CFCs are automatically transferred by a stream of carrier gas into a precolumn and then a chromatog. sepg. column. The CCl<sub>3</sub>F and CCl<sub>2</sub>F<sub>2</sub> peaks are detected by electron capture detector and their areas are integrated digitally. CFC amts. are calcd. using fitted calibration curves, generated by injection of various multiple aliquots of gas std. contg. known concns. of CFCs. Preliminary concn. values for these compds. are printed at the completion of each anal. Total anal. time for air and water samples is <10 min, allowing detailed vertical profiles of the concns. of these compds. in the water column and concns. in the overlying atm. to be detd. within a few hours of completion of a hydrog. station. Typical relative std. deviations for detns. of CCl<sub>3</sub>F and CCl<sub>2</sub>F<sub>2</sub> in near-surface seawater contg. equil. levels of these compds. are approx. 1%. Limits of detection for both compds. in 30 cm<sup>3</sup> seawater samples are about 0.005 × 10<sup>-12</sup> mol kg<sup>-1</sup>.

L12 ANSWER 129 OF 143 CA COPYRIGHT 2008 ACS on STN

AN 76:77983 CA

OREF 76:12539a,12542a

TI Heating rate controller for thermally stimulated conductivity and thermoluminescence measurements

AU Manning, E. G.; Littlejohn, M. A.; Hutchby, J. A.; Oakley, E. M.

CS North Carolina State Univ., Raleigh, NC, USA

SO Review of Scientific Instruments (1972), 43(2), 324-6

AB A temp. controller is described which enables the temp. of a sample mounted on a cold finger to be varied linearly with time. Heating rates of 0.5-10°K/min can be achieved at 90-300°K. Provision for terminating the sample heating at any temp. between these extremes is available. The temp. can be held at the terminating temp. or be reduced to the starting temp. in a matter of min. The controller has been used for

thermally stimulated cond. measurements, and should be useful for thermoluminescence measurements as well.

=> log y

STN INTERNATIONAL LOGOFF AT 12:39:39 ON 01 AUG 2008